

Supplementary

Simultaneous Amperometric Aptasensor Based on Diazonium Grafted Screen-Printed Carbon Electrode for Detection of CFP10 and MPT64 Biomarkers for Early Tuberculosis Diagnosis

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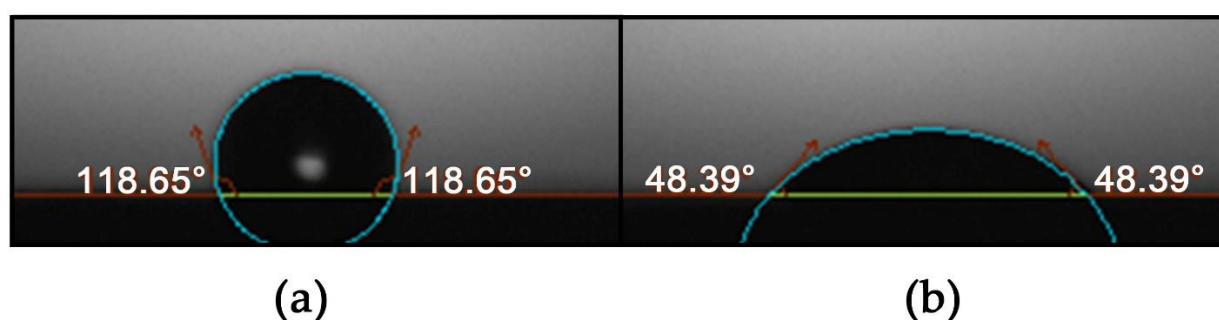


Figure S1. Contact angle analysis of (a) bare carbon electrode and (b) diazonium grafted surface.

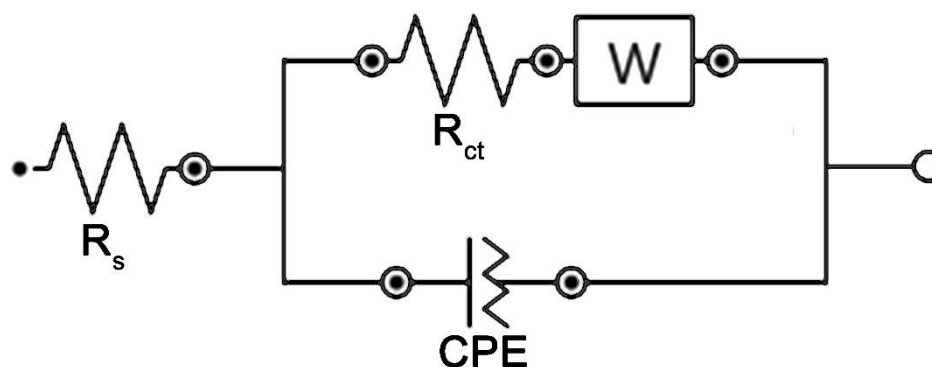


Figure S2. Suggested equivalent circuit model of the Nyquist plot from EIS measurements. R_s : solution resistance; R_{ct} : charge-transfer resistance; W : Warburg impedance; CPE : constant phase element.

Table S1. Fitting parameters for Nyquist plot for stepwise modification of the developed sensor.

Surface	EIS parameters	Fitted value	Fitted error (%)
Bare SPCE	Solution resistance, R_s	156.36 Ω	0.657
	Charge transfer resistance, R_{ct}	1568.10 Ω	0.58
	Constant phase element, CPE	0.92 μMho	4.035
	Warburg impedance, W	0.0013 Mho	1.317
SPCE-ABA	Solution resistance, R_s	164.72 Ω	0.36
	Charge transfer resistance, R_{ct}	49371 Ω	0.395
	Constant phase element, CPE	1.19 μMho	0.844
	Warburg impedance, W	0.0010 Mho	11.418

SPCE-ABA-EDC/NHS	Solution resistance, R_s	244 Ω	1.506
	Charge transfer resistance, R_{ct}	1562.20 Ω	1.122
	Constant phase element, CPE	23.56 μMho	3.391
	Warburg impedance, W	0.0013 Mho	1.448
SPCE-ABA-EDC/NHS-Aptamer	Solution resistance, R_s	154.68 Ω	0.427
	Charge transfer resistance, R_{ct}	10010 Ω	0.486
	Constant phase element, CPE	1.75 μMho	0.225
	Warburg impedance, W	0.0015 Mho	5.507
SPCE-ABA-EDC/NHS-Aptamer-Ethanolamine	Solution resistance, R_s	158.97 Ω	0.512
	Charge transfer resistance, R_{ct}	2224.50 Ω	0.548
	Constant phase element, CPE	3.31 μMho	2.691
	Warburg impedance, W	0.0014 Mho	1.473
SPCE-ABA-EDC/NHS-Aptamer-Ethanolamine-BSA	Solution resistance, R_s	133.9 Ω	1.799
	Charge transfer resistance, R_{ct}	3076.1 Ω	2.342
	Constant phase element, CPE	19.44 μMho	6.565
	Warburg impedance, W	0.0014 Mho	6.291